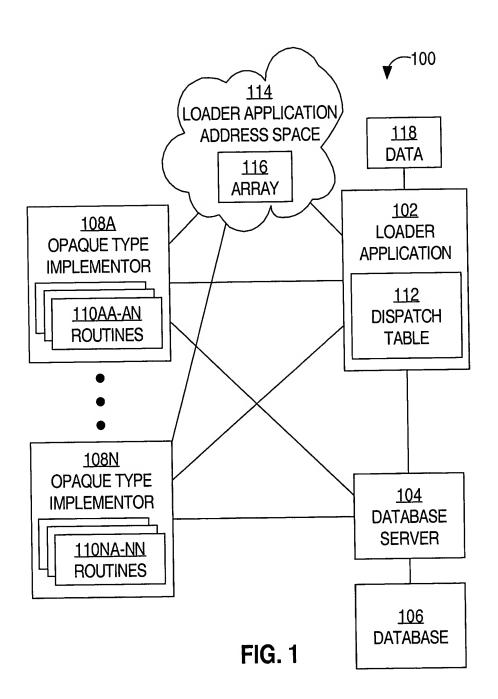
Title: Direct Loading Of Opaque Types

Inventor(s): Namit Jain, et al.

Date: August 25, 2003 Express Mail No. EV322192420US

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FIG. 2

200

202 OPAQUE TYPE IMPLEMENTOR REGISTERS, WITH A LOADER APPLICATION, ROUTINES THAT ARE IMPLEMENTED BY THE OPAQUE TYPE IMPLEMENTOR

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204 LOADER APPLICATION ADDS, TO A DISPATCH TABLE, AN ENTRY THAT INDICATES AN ASSOCIATION BETWEEN THE ROUTINES AND AN OPAQUE TYPE THAT THE OPAQUE TYPE IMPLEMENTOR IMPLEMENTS

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206 LOADER APPLICATION RECEIVES DATA OF AN OPAQUE TYPE

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208 LOADER APPLICATION DETERMINES, FROM THE DISPATCH TABLE, WHICH ROUTINES ARE ASSOCIATED WITH THE OPAQUE TYPE

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210 LOADER APPLICATION INVOKES THE ROUTINES

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211 LOADER APPLICATION INVOKES ROUTINES TO DISCOVER THE STRUCTURE (NUMBER AND TYPES OF ATTRIBUTES) OF THE OPAQUE TYPE

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212 ROUTINE CREATES AN ARRAY THAT COMPRISES A SEPARATE COLUMN FOR EACH ATTRIBUTE OF THE OPAQUE TYPE

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214 ROUTINE POPULATES THE COLUMNS OF THE ARRAY WITH VALUES OF INSTANCES THAT ARE SPECIFIED IN THE DATA

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216 LOADER APPLICATION GENERATES A DATA STREAM BASED ON THE ARRAY

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218 LOADER APPLICATION STREAMS THE DATA TO A DATABASE SERVER

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220 DATABASE SERVER WRITES THE DATA DIRECTLY INTO THE DATABASE

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